

# United States Patent and Trademark Office

UNITED STATES DEPARTMENT OF COMMERCE United States Ratery and Trademark Office Address: COMMISSIONER FOR PATENTS P.O. Box 1450 Alexandrd, Virginia 22313-1450 www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/685,885	10/11/2000	Anders Johnson	108339-00010	5015
7590 03/15/2006 SQUIRE SANDERS & DEMPSEY LLP			EXAMINER	
			PICH, PONNOREAY	
14th FL 8000 Towers Crescent Drive Tysons Corner, VA 22182-2700		ART UNIT	PAPER NUMBER	
			2135	
			DATE MAILED: 03/15/200	6

Please find below and/or attached an Office communication concerning this application or proceeding.

	1 4 10 10			
	Application No.	Applicant(s)	Applicant(s)	
0.00	09/685,885	JOHNSON, ANDERS		
Office Action Summary	Examiner	Art Unit		
	Ponnoreay Pich	2135		
The MAILING DATE of this communication Period for Reply	appears on the cover sheet wit	the correspondence address		
A SHORTENED STATUTORY PERIOD FOR REWHICHEVER IS LONGER, FROM THE MAILING  - Extensions of time may be available under the provisions of 37 CF after SIX (6) MONTHS from the mailing date of this communication. If NO period for reply is specified above, the maximum statutory period for reply within the set or extended period for reply will, by six Any reply received by the Office later than three months after the meanned patent term adjustment. See 37 CFR 1.704(b).	S DATE OF THIS COMMUNIC R 1.136(a). In no event, however, may a re h. eriod will apply and will expire SIX (6) MONT tatute, cause the application to become ABA	ATION.  Jly be timely filed  HS from the mailing date of this communication.  NDONED (35 U.S.C. § 133).		
Status				
Responsive to communication(s) filed on 0 2a)    This action is <b>FINAL</b> .    2b)	This action is non-final.	·		
Disposition of Claims				
4)	drawn from consideration. s/are rejected.			
9)☐ The specification is objected to by the Exam	niner.			
10) The drawing(s) filed on is/are: a) Applicant may not request that any objection to Replacement drawing sheet(s) including the column The oath or declaration is objected to by the	accepted or b) objected to be the drawing(s) be held in abeyand rrection is required if the drawing(s	e. See 37 CFR 1.85(a). i) is objected to. See 37 CFR 1.121(d).		
Priority under 35 U.S.C. § 119				
12) Acknowledgment is made of a claim for fore a) All b) Some * c) None of:  1. Certified copies of the priority docum 2. Certified copies of the priority docum 3. Copies of the certified copies of the priority docum application from the International Bu * See the attached detailed Office action for a	nents have been received. nents have been received in Ap priority documents have been r reau (PCT Rule 17.2(a)).	plication No eceived in this National Stage		
Attachment(s)  1) Notice of References Cited (PTO-892)		mmary (PTO-413)		
<ol> <li>Notice of Draftsperson's Patent Drawing Review (PTO-948)</li> <li>Information Disclosure Statement(s) (PTO-1449 or PTO/SE Paper No(s)/Mail Date</li> </ol>	′	/Mail Date ormal Patent Application (PTO-152) -		

## **DETAILED ACTION**

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 1/3/2006 has been entered.

Claims 1-3,5-15,17-19, 21-27, and 29-33 are pending. Applicant's amendments and arguments directed at directed claims have been considered, but are moot in view of new grounds of rejections presented below.

# Claim Objections

Claim 8, 25, 26, 27, and 31 are objected to because of the following informalities:

- The examiner believes the semicolon on line 3 of claim 8 should instead be a colon.
- 2. The examiner believes that in line 5 of claim 25 "a random number" should instead be "the random number".
- 3. As per claim 26, applicant recites "said random number". The examiner notes that claim 25, from which claim 26 depends, and the rest of the claims which depends on claim 25 recites "the random number" instead of "said random number". The examiner respectfully suggests applicant keeps the usage of "the" and "said" consistent and change "said random number" in claim 26 to "the

random number". Since the usage is not consistent, it seems to imply that what is being referred to by "said" and "the" are separate items.

- 4. The examiner believes there should be a semicolon at the end of line 3 of claim 27.
- 5. In line 6 of claim 31, the examiner believes "a final output enable signal" should instead be "the final output enable signal".
- 6. Appropriate correction is required.

# Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 3, 8, 21-22, 29, and 31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

1. Claim 3 recites "...said encryption module further comprises a public key encryption module...". It appears this recited limitation is redundant since claim 3 is dependent on claim 1 and claim 1 already recites a public key module in communication with said encryption module. It is unclear if applicant meant for claim 3 to recite yet another public key encryption module or if applicant accidentally recited a redundant limitation. The examiner suspects the latter and that claim 3 should instead recite "An apparatus for enabling functionality of a component as recited in claim 1, wherein said public key encryption module is

- configured to receive a public key and a guess passcode from said at least one memory as inputs and generate a ciphertext bit string as an output."
- 2. Claim 8 recites "...apparatus further comprising a bonding option circuit...". The examiner suspects applicant accidentally recited a redundant limitation since claims 6 and 7 from which claim 8 depends already recite the bonding option circuit that the apparatus comprises. The examiner believes claim 8 should instead recite "An apparatus for enabling functionality of a component as recited in claim 7, wherein said bonding option circuit comprises:...".
- 3. Claim 21 recites "the comparator" in line 6, which lacks antecedent basis. The examiner suspects applicant meant "said comparing device" instead.
- 4. In claim 29, a first bit string and a third bit string are inputs to a comparator. Yet, line 5 of claim 29 describes the first bit string being compared to the second bit string instead. The examiner believes this might be a typo and that applicant meant for "second" to instead be "third". Clarification by applicant is respectfully requested.
- 5. Claim 31 recites "said determining a final output step", which lacks antecedent basis. The examiner suspects applicant meant "said determining a final output enable signal step".
- 6. Note the above comments are not meant to be construed as suggestions on how to modify the current set of claims. They are merely what the examiner is suspecting applicant meant in light of the 112, second paragraph errors. In the course of applying art rejection, the examiner will reject the limitations as recited,

though clarifications by applicant in regards to the above rejections are respectfully requested.

7. Any claims not specifically addressed are rejected by virtue of dependency.

# Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-3, 5-15, 17-19, and 21-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tello (US 6,463,537) in view of Weiss (US 6,065,029) and further in view of Angelo et al (US 6,370,649).

#### Claim 1:

Tello discloses an apparatus for enabling functionality of a component (col 4, lines 57-63 and Fig 1), said apparatus comprising:

- A random number generating module for generating a random number (col 18, lines 53-57).
- 2. A hash function module in communication with said random generating module (col 8, lines 5-16 and col 18, lines 53-57).

- 3. A host in communication with said random number generating module (Fig 1; col 8, lines 33-39; and col 15, lines 5-19).
- 4. At least one memory in communication with said host (col 9, lines 21-31).
- 5. An encryption module in communication with at least one memory (col 24, lines 46-50).
- 6. A comparing device in communication with said encryption module and said hash function module (col 16, lines 40-55).
- 7. Wherein said comparing device compares a first bit string to a second bit string to generate a function enable output for the component (col 15, lines 52-65 and col 16, lines 13-26).

Tello does not discloses wherein said random number generating module comprises a linear feedback shift register and a ring oscillator in communication with said hash function module, the linear feedback shift register being configured to output some random number. However, Weiss discloses one of the conventional ways of creating a random number generation module is via the use of a linear feedback shift register and a ring oscillator (col 2, lines 56-65). Weiss discloses that with this type of random number generation module, the linear feedback shift register is configured to output a random number (col 2, lines 63-65). Weiss's own invention improves upon a conventional random number generator, but it is still a random number generation module (Fig 1) comprising a linear feedback shift register (Fig 1, item 200 and Fig 4) and a ring oscillator (Fig 1, item 110; Fig 3; and Fig 2, item 110).

At the time applicant's invention was made, it would have been obvious to one of ordinary skill in the art to modify Tello's invention such that the random number generation module discloses by Tello comprised a linear feedback shift register and a ring oscillator in communication with said hash function module, the linear feedback shift register being configured to output a random number. Recall that Tello discloses the random number generation module and the hash function module are in communication with each other (col 8, lines 5-16 and col 18, lines 53-57), so if one were to employ a random number generating module that comprises a linear feedback shift register and a ring oscillator, the linear feedback shift register and ring oscillator would be in communication with the hash function module. One of ordinary skill would have been motivated to incorporate Weiss's teachings of employing a random number generator that comprises a linear feedback shift register and a ring oscillator as Tello's random number generator because Weiss discloses that such a random number generator is a conventional random number generator (col 2, lines 56-65). Use of conventional components would cut down on the research and development costs of having to develop something that has already been invented. Further, the examiner submits that functions carried out via digital circuits are typically faster than functions carried out via software, so utilizing a conventional digital random number generator circuit disclosed by Weiss within Tello's system would speed up Tello's system since the random number generating process would be faster.

Tello also does not disclose said host is configured to receive a guess passcode from a manufacturer of the component. However, Angelo teaches a computer system

that implements a fail-safe password system that allows the manufacturer to securely supply a password to users (col 1, line 65-col 2, line 3). In light of this, it would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to have further modified Tello's apparatus according to the limitations recited in claim 1. One of ordinary skill would have been motivated to incorporate Angelo's teachings because it allows for a hardened password security infrastructure (col 3, lines 18-20).

Page 8

The examiner notes that even without Tello's teachings, it is common knowledge wherein a host is configured to receive a guess passcode from a manufacturer of a component—i.e. a cable decoder box, for example, receives entitlement messages from the cable company which reads on a guess passcode and enables a television set to display a descrambled show. It would also have been obvious to one of ordinary skill in the art to have further modified Tello's apparatus according to the limitations recited in claim 1 in light of such common knowledge and one of ordinary skill would have been motivated to do so as it would provide a way for a manufacturer of a component who also sells subscription to digital content to maintain control of the digital content and only allow customers who have paid for the content to get access.

# Claim 2:

Tello further discloses said hash function module further comprises a one-way hash function module configured to receive a pre-image input and output a hash value using a one-way has function algorithm (col 7, lines 64-66).

#### Claim 3:

Tello further discloses said encryption module further comprises a public key encryption module, said public key encryption module being configured to receive a public key and a guess passcode from said at least one memory area as inputs and generate a ciphertext bit string as an output (col 19, lines 12-25; col 24, lines 13-50; and col 37, lines 27-42).

#### Claim 5:

Weiss further discloses wherein said random number generating module further comprises: a NAND gate in communication with said linear feedback shift register; and at least one inverter in communication with said linear feedback shift register and said NAND gate (Figures 1-4), wherein said NAND gate is configured to receive an activation pulse (col 5, lines 3-7 and Fig 3, item 102).

Figure 1 shows a random number generating module comprising oscillators, item 110. Fig 2 shows oscillator 110 comprising ring oscillators 120-150. Fig 3 shows that a ring oscillator comprises NAND gates and inverters, see also col 4, lines 41-62. Fig 4 shows that circuit 200 in Fig 1 comprises linear feedback shift registers, see also col 6, lines 14-27. Since Fig 1 shows the linear feedback shift register is in communication with the ring oscillator and the ring oscillator comprises NAND gates and at least one inverter, Figures 1-4 of Weiss discloses the limitations as recited in claim 5.

# Claim 6:

Tello further discloses said apparatus further comprises a selecting device for selecting at least one of the function enable output and bonding option output (col 9, lines 33-44).

# Claim 7:

Tello further discloses said selecting device further comprises an OR gate having at least one input for receiving the function enable output and the bonding option output (col 13, lines 1-56; col 19, lines 12-25; and col 37, lines 27-42).

#### Claim 8:

Tello further discloses said bonding option circuit comprising a pull up resistor in communication with the OR gate and a power supply and a switch in communication with a ground potential and said OR gate (col 9, lines 59-62 and col 12, line 65-col 13, line 5).

#### Claim 9:

Tello further discloses said selecting device further comprises:

- A multiplexer having at least one multiplexer input in communication with the comparing device and a multiplexer output (col 13, lines 5-49).
- 2. A selection circuit in communication with the at least one multiplexer input (col 13, lines 5-49).
- 3. A bonding option circuit in communication with the at least one multiplexer input (col 9, lines 33-49 and col 12, lines 35-45).
- 4. Wherein said multiplexer is configured to receive a selection input from the selection circuit that is used to determine whether to enable functionality of said component in accordance with the bonding option output or the function enable output (col 9, lines 33-49; col 12, lines 35-45; col 19, lines 12-25; and col 37, lines 27-42).

Art Unit: 2135

Claim 10:

Tello further discloses said selection circuit further comprises:

1. At least one first non-volatile memory location having at least one first selection

bit stored therein (col 7, line 63-col 8, line 4 and col 15, lines 1-36).

2. At least one second non-volatile memory location having at least one second

selection bit stored therein (col 8, lines 40-49 and col 15, lines 1-36).

3. An OR gate having a first input, a second inverted input, and a logic output, said

first input being in communication with said at least one first non-volatile memory

location and said second inverted input being in communication with said at least

one second non-volatile memory location (col 19, lines 12-25 and col 37, lines

27-42).

4. Wherein said selection circuit is configured to generate a selection indicator on

the logic output of the OR gate in accordance with the at least one first selection

bit and said at least one second selection bit (col 13, lines 6-58).

Claim 11:

Tello further discloses said first bit string further comprises a ciphertext bit string

generated by the encryption module (col 15, lines 52-65; col 16, lines 13-26; and col 20,

lines 1-23).

Claim 12:

Tello further discloses said second bit string further comprises a hash value

generated by said hash function module (col 16, lines 30-32).

Claim 13:

Art Unit: 2135

Tello does not explicitly disclose said comparing device further comprises a comparator. However, a comparator must be used or a comparison would not be possible.

## Claim 14:

Tello further discloses said component further comprises at least one of a network switch and a media access controller (col 11, lines 49-52).

#### Claim 15:

Tello discloses a component for selectively enabling functionality of an electronic device, said component comprising:

- 1. Means for generating a random bit string (col 8, lines 33-39 and col 15, lines 5-19).
- A hash function module in communication with said means for generating (col 8, lines 10-16).
- 3. Means for acquiring a guess passcode in communication with said means for generating (col 9, lines 20-24 and col 24, lines 46-50).
- 4. An encryption module in communication with said means for acquiring (col 24, lines 46-50).
- 5. A comparing device in communication with said encryption module and said hash function module, said comparing device having an output for transmitting a functionality enable signal therefrom (col 15, lines 52-65; col 16, lines 40-55; and col 16, lines 13-26).

Tello does not disclose the means for generating comprising a random number generating module configured to receive an initiate signal and output a random number, and the means for generating further comprising a linear feedback shift register, having an input and an output, and a ring oscillator. However, Weiss discloses means for generating comprising a random number generating module configured to receive an initiate signal and output a random number, and the means for generating further comprising a linear feedback shift register, having an input and an output, and a ring oscillator (col 2, lines 56-65 and Fig 1-4). At the time applicant's invention was made, it would have been obvious to one of ordinary skill in the art to modify Tello's means for generating such that it comprise a random number generating module configured to receive an initiate signal and output a random number, and the means for generating further comprising a linear feedback shift register, having an input and an output, and a ring oscillator. One of ordinary skill would have been motivated to incorporate Weiss's teachings within Tello's system for the same reasons given in claim 1.

Tello also does not disclose wherein the means for acquiring the guess passcode is configured to acquire the guess passcode from a manufacturer of the electronic device. However, for the same reasons and motivations given in claim 1, it would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to have further modified Tello's component according to the limitations recited in claim 15 in light of Angelo's teachings (or in light of common knowledge in the art).

#### Claim 17:

Weiss further discloses said means for generating further comprises: a NAND gate in communication with said linear feedback shift register, said NAND gate haivn at least one input and an output; and a bank of inverters in a series configuration, and an input to said bank of inverters being in communication with said output of said NAND gate and said input of said linear feedback shift register, wherein said at least one input of said NAND gate receives and activation signal that initiates said linear feedback shift register to generate a random number on the output of said linear feedback shift register (Fig 1-4 and col 5, lines 3-7).

#### Claim 18:

The limitation of claim 18 is substantially similar to claim 2 and is rejected for the same reasons.

#### Claim 19:

Tello further discloses wherein said means for acquiring a guess passcode further comprises:

- 1. A host in communication with said means for generating (col 15, lines 7-11).
- 2. A guess register in communication with said host (col 9, 20-24 and col 24, lines 46-50).
- 3. The random bit string (col 9, lines 20-25 and col 15, lines 20-27).

Tello does not disclose wherein said host is configured to receive a guess passcode from a manufacturer corresponding to the random bit string. However, for the same reasons and motivations given in claim 1, it would have been obvious to one of

Art Unit: 2135

ordinary skill in the art at the time the applicant's invention was made to have modified Tello's component according to the limitations recited in claim 19 in light of Angelo's teachings (or in light of common knowledge in the art).

#### Claim 21:

Tello further discloses said component further comprising:

 A bonding option circuit in communication with said comparing device (col 9, lines 33-49 and col 12, lines 35-45).

- 2. An OR gate in communication with said comparing device (col 12, line 67-col 13, line 5).
- 3. Wherein said OR gate is configured to select the functionality enable signal from the comparator or an output from the bonding circuit in order to generate a final enable output (col 9, lines 33-49 and col 13, lines 1-56).

The examiner also notes that the limitation as recited in claim 21 is an obvious way of using an OR gate to generate a final enable output as the output from the comparing device naturally would enable a device on a successful comparison while the output from the bonding option circuit can be used as a bypass circuit, which are known in the art and one of ordinary skill would be motivated to use one for testing purposes.

#### Claim 22:

Claim 22 recites limitations substantially similar to claim 8 and is rejected for the same reasons.

#### Claim 23:

Art Unit: 2135

Claim 23 recites limitations substantially similar to claim 13 and is rejected for the same reasons.

#### Claim 24:

Claim 24 recites limitations substantially similar to claim 14 and is rejected for the same reasons.

Claims 25-27 and 29-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Davis et al (US 5,577,121) in view of Tello (US 6,463,537) and Weiss (US 6,065,029) and further in view of Angelo et al (US 6,370,649)

#### Claim 25:

Davis discloses a method for enabling functionality of an electronic component, said method comprising the steps of:

- Generating a random number, wherein said step of generating a random number comprises the steps of receiving an initiate signal at a random number generating module and outputting the random number (col 13, lines 1-10).
- 2. Calculating a first bit string from the random number (col 13, lines 9-10 and 18-25).
- Determining a second bit string corresponding to the random number (col 13, lines 36-46).
- 4. Encrypting the second bit string with a key to generate a third bit string (col 13, line 36-42).

5. Comparing the third bit string to the first bit string to determine at match (col 13, line 53-55).

6. Outputting a function enable signal in accordance with the comparison (col 13, lines 53-55). The confirmation signal represents the enable signal.

Davis does not disclose the random number generating module comprises a linear feedback shift register and a ring oscillator. However, Weiss discloses one of the conventional ways of creating a random number generation module is via the use of a linear feedback shift register and a ring oscillator (col 2, lines 56-65). Weiss's own invention improves upon a conventional random number generator, but it is still a random number generation module (Fig 1) comprising a linear feedback shift register (Fig 1, item 200 and Fig 4) and a ring oscillator (Fig 1, item 110; Fig 3; and Fig 2, item 110). At the time applicant's invention was made, it would have been obvious to one of ordinary skill in the art to modify Davis's invention such that his random number generating module comprises a linear feedback shift register and a ring oscillator. One of ordinary skill would have been motivated to do so because many conventional random number generators made at the time applicant's invention was made comprises a linear feedback shift register and a ring oscillator. Use of conventional components would cut down on the research and development costs of having to develop something that has already been invented.

Davis does not disclose the second bit string was encrypted using a public encryption key. However, the examiner asserts that the use of public encryption keys

Art Unit: 2135

for encryption purposes was well known in the art at the time the applicant's invention was made. It would have been obvious to one of ordinary skill to have used a public encryption key as the type of encryption key used is an arbitrary choice. Further, Tello discloses encryption using a public encryption key (col 8, lines 33-39). In light of this, it would have been obvious to one of ordinary skill to have further modified Davis's method to encrypt the second bit string with a public key to generate a third bit string. One of ordinary skill would have been motivated to incorporate Tello's teachings because Tello discloses a similar enabling invention as Davis and Tello discloses that almost any key algorithm can be used without materially changing the functionality of the invention (col 8, lines 36-39), therefore the use of a public key is an arbitrary choice. Further, public key systems are typically more secure than private key systems, therefore using a public key system within Davis's invention would make it more secure.

Davis also does not disclose wherein the step of determining the second bit string comprises receiving the second bit string from a manufacturer of the electronic component. However, for the same reasons and motivations given in claim 1, it would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to have modified the combination method of Davis and Tello according to the limitations recited in claim 25 in light of Angelo's teachings (or in light of common knowledge in the art).

#### Claim 26:

With respect to claim 26, Davis meets the limitation of "wherein said step of calculating a first bit string further comprises calculating a hash value of the random number" is met on column 17, lines 42-52 and column 14, lines 43-47).

#### Claim 27:

With respect to claim 27, Davis meets the limitation of "transmitting the random number to a manufacturer" on col 13, lines 8-10; "calculating a guess passcode corresponding to the random number" is met on col 13, lines 18-22; and "receiving the guess passcode in a host" is met on col 13, lines 23-29.

#### Claim 29:

With respect to claim 29, Davis meets the limitation of "receiving the third bit string at a first input of a comparator; and receiving the first bit string at a second input of the comparator; determining if the first bit string matched the second bit string" on col 13, lines 66-67 and col 14, lines 1-3. Davis also meets the limitation of "outputting a match signal if a match is determined (col 14, lines 3-7). The examiner notes that applicant did not argue this limitation in the last office action, so assumes applicant agrees Davis meets this limitation.

## Claim 30:

With respect to claim 30, the limitation of "wherein said outputting step further comprises the step of determining a final output enable signal from a bonding option output signal and the function enable signal" is met inherently on column 14, lines 3-10. The examiner notes that applicant did not argue this limitation in the last office action, so assumes applicant agrees Davis meets this limitation.

Art Unit: 2135

# Claim 31:

Davis does not explicitly disclose the limitations recited in claim 31. However, claim 31 contains limitations substantially similar to the limitations recited in claim 21 which were rejected using Tello. Therefore, it would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to have incorporated Tello's teachings with Davis's method according to the limitation recited in claim 31. One of ordinary skill would have been motivated to incorporate Tello's teachings as Tello discloses that his invention would provide for a means for controlling access to a computer and sensitive data stored on it at the pre-boot phase and during operation of the computer (col 4, lines 57-61).

#### Claim 32:

With respect to claim 32, Davis meets the limitation of "wherein said transmitting step further comprises communicating with the manufacturer through at least one of an internet connection, a dial up connection, and a voice connection to obtain the guess passcode" on col 17, lines 18-22.

#### Claim 33:

Claim 33 recites a limitation substantially similar to what is recited in claim 14 and is rejected for the same reasons.

#### Conclusion

Art Unit: 2135

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ponnoreay Pich whose telephone number is 571-272-7962. The examiner can normally be reached on 9:00am-4:30pm Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Vu can be reached on 571-272-3859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ponnoreay Pich

Examiner

Art Unit 2135

PP

SUPERVISORY PATENT EXAMINE:

**TECHNOLOGY CENTER 2100**